Air Bubble Detector

Bubble detection is critical in applications such as infusion pumps, hemodialysis and blood flow monitoring. TE Connectivity (TE) has developed a new compact AD-101 Air Bubble Detector (ABD) for non-invasive continuous monitoring of fluid for air bubble detection. Using ultrasonic technology the AD-101 sensor is capable of positively identifying the presence of a break in flow of any type of liquid.

Features

- Detects bubble size as small as 70% of tubing inner diameter
- Sensor can be customized to fit tube or pipe
- Tubing size from 3 mm to 10 mm
- Non-invasive design eliminates sterility and fluid compatibility concerns
- High noise immunity to EMI/RFI
- Acoustic coupling agent not required
- Integral electronics
- Power-on and continuous self-diagnostic tests to confirm functionality

Applications

- Infusion Pump
- Apheresis/Auto-transfusion
- Biotech/DNA Analysis
- Blood Processing
- Immunoassay
- Chemical Analysis
- Hemodialysis
- IN-VIVO Detection of Gas
- Hydroponics
- Smart Farming
- Food Processing

Operating Parameters & Specifications

- Temperature range: 0°C - 40°C
- Response time: 0.2ms
- Input: 5VDC-24VDC
- Output: 3.3 V TTL Logic
### Specifications

| Input          | Red = 5 – 24 VDC  
|               | Black = GND       |
| Sensor Output | White = Output    |
|               | 3.3V TTL, Low When Liquid Present, High When Bubble Present |
| Self-Test Output | Yellow = Self-test output, 3.3V TTL, High When Pass, Low When Fault |
| Response Time | 0.22 Milliseconds |
| Temp. Range   | 0 to 40°C         |
| Bubble Size   | Smallest bubble detected = 70% of tubing I.D. |
| Material      | ABS/PC (55/45) Plastic Blend, Injection Molded Parts, UL 94 V-2 Rated |
| Cable         | 4 Conductor 28AWG, 350mm Long UL Style Number 2725 |
| Electronics   | Integral          |

### Pin Out

<table>
<thead>
<tr>
<th>Pin</th>
<th>Color</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>GND</td>
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<tr>
<td>2</td>
<td>White</td>
<td>Output</td>
</tr>
<tr>
<td>3</td>
<td>Yellow</td>
<td>Self-test</td>
</tr>
<tr>
<td>4</td>
<td>Red</td>
<td>5 - 24 VDC</td>
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### Part Number

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>071-06403</td>
<td>AD-101 compact ABD assembly 4MM</td>
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<tr>
<td>071-06402</td>
<td>AD-101 compact ABD assembly 6MM</td>
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</tbody>
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**TE.com/sensorsolutions**

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